



PATENT APPLICATION
Attorney Docket No. 3157
Serial Number: 10/715,342

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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Serial No.	10/715,342)	
)	
Date Filed:	November 16, 2003)	
)	
Subject:	Radar Frequency)	
	Hopping)	

PRELIMINARY AMENDMENT

Please enter the following Amendments and Remarks of record:

AMENDMENTS

In the Description:

On page 8, first full paragraph, please amend the seventh sentence to change "sine" to "sinc", as shown below:

The preferred embodiment of the present invention is specific to a TDDC radar. In order for the TDDC technology to function well, each RF pulse must be phase-coherent. This rules out simply switching an oscillator in-and-out. One method of successfully realizing repetitive phase-coherent pulses is to pulse a tuned, high-gain RF amplifier on and off at the Pulse Repetition Frequency (PRF). This amplifier is stable in itself, so it won't oscillate unpredictably while turned on. If the amplifier is gated on/off with a harmonically rich signal, then the amplifier will lock onto and amplify these harmonics. In the case of the radar of the preferred embodiment, an RF transistor (GAsFET) is gated on-and-off using a fast-rise-time 74AC04 CMOS inverter gate. The GAsFET transistor is tuned to a center frequency using trimmed gate-to-ground inductance, a trimmed open-ended stub on the GasFET drain, and a potentiometer-adjusted bias voltage to fine tune the desired harmonic. This results in a close-to-ideal pulse with associated sine-function spectrum ($\sin[e]c(x) = \sin(x) / x$). RF output amplitude is controlled by a resistive attenuator before being transmitted by the antenna. Note that a conventional RF amplifier could be placed after the pulsed amplifier if more RF power was desired.